In our next we hope to be able to give a report of the objects of anthropological interest in the Paris exhibition; but in the meantime, we especially invite the attention of British anthropologists to both the congresses we have mentioned, and trust that British science will be well represented at them.

PROCEEDINGS OF THE PARIS ANTHROPOLOGICAL SOCIETY.*

Dr. Pruner-Bey, on taking the chair as President, vice Dr. Gratiolet who retired by rotation, delivered an opening address.

After congratulating the Society on its steady progress, numbering now 264 numbers, and adverting to the decree by which the Society is recognised by the State as an institution of public utility, M. Pruner-Bey offered some interesting general remarks on the study of anthropology, and concluded in nearly the following words.

Every true science has for its object to trace the effects to their causes. Consequently in the same way as the theory of vital force has been demolished by substituting for it the correlation of forces and molecular actions, the attempt has been made to substitute the physiology of the brain and the nervous system for the physiology of former days. A great struggle on this subject is still going on in the fatherland of modern ideology. Its importance has been appreciated in our own discussions, and thanks to your own efforts, some light has been thrown on this subject. Let us, however, confess that the constitution and disposition of the anatomical elements of the brain in as far as they are accessible to our investigation, leave us but little hope to see the end of the struggle. Whilst, for a long time to come, we must confine ourselves to signalise and classify the manifestations of our mind, it is on the other hand only by comparative studies that we may be enabled to distinguish what is fundamental in human nature and what is the result of the culture of our faculties. I was obliged to touch on this delicate and thorny matter in order both to point out our mission in the sphere of speculation and to obviate the reproaches which might be made to anthropology, for not being as yet a science as regards the most interesting questions. We are in this respect entirely in the same position as the zoologist, who no more than the anthropologist can detect the primary springs which set the instinctive and intelligent acts of animals into action. We may even affirm that

* Continued from No. xvi, p. 128.

as regards phenomenology, man is already better known to us than the animal.

On the Relations between the Anthropoid Apes and Man, by M. Schaafhausen of Bonn, translated by M. Pruner-Bey. The scientific portion of M. du Chaillu's work has been received with distrust by the learned. There exists, nevertheless, no reason for doubting his descriptions of the mode of life of the gorilla. Some of the corrections of Mr. Reade of the remarks of Du Chaillu have no great bearing on the position which in my opinion this animal occupies in the scale of beings. But whatever may be the value of a profound knowledge of the mode of life of a gorilla, its anatomical structure shows us sufficiently the degree of his organisation, and the size of his brain, upon which depends his intelligence. In this respect the distance between the gorilla and man is immense, a difference which has not been properly appreciated by Mr. Huxley. There is no doubt that in the brain of the large anthropoid apes, no essential part of the human brain is absent; but as regards volume, the difference is very remarkable. The assertion of Mr. Huxley that men, even as regards the volume of the brain, differ among themselves more than apes, is equally erroneous; an opinion which is founded upon the arbitrary employment of measurements of crania both rare and doubtful. The brain of the Australian exceeds two or three times the volume of the brain of the gorilla, whilst the brain of a European exceeds that of the Australian only by one-fifth. Another allegation of Mr. Huxley to the effect that, as regards the volume of the brain, the inferior apes differ from the superior as much as the latter differ from man, is also without scientific value, inasmuch as this author has not taken into account the incomparable difference of size of the above-mentioned simia, whilst in this respect man and the gorilla are nearly equal. This distance between man and ape must not be ignored; in fact, one glance at the cranial cavity reveals it. I think, however, that it was less in times past, or perhaps did not exist at all. The differences of volume in organised beings of the present world are only gaps produced in the chain by time. Transitional forms will, no doubt, be found still reposing in the bosom of the earth which covers palæontological creation. Without entering into pretended developments, I shall confine myself to a single point.

In the present state of things, the distance between man and the animal increases under our own eye. Not merely the human races standing lowest in the scale, and presenting in their organisation many resemblances to animal forms, are gradually becoming extinct, but the superior apes approaching nearest to man become more rare from century to century; and will, perhaps, in a few centuries have entirely

disappeared. What is there illogical in the idea that thousands of years back the distance between the lowest man and the highest ape was less than at present, and that it would still lessen the more we ascend the past?

There is another circumstance, not owing to chance but to a natural law, namely, that the superior apes could only maintain themselves amidst inferior men; for on contact with civilised peoples they would long since have disappeared. The more that man advances, the more likely is he to break the links which ally him to brutes. There is another striking fact which deserves mention, namely, that the large apes of Asia and Africa differ from each other by the same characters which distinguish the men of these two continents, that is to say, in colour and the form of the cranium. Like the brachycephalic Malay, the orang is brown, and his head is round; the gorilla, on the contrary, is black and dolichocephalic, like the African negro. This approach of two different human races to different apes from the same countries, seems to me the most fatal objection, in our present state of knowledge, which might be made to the theory of the unity of the human genus.

M. Gratiolet thinks that there exists no reason for establishing an anatomical similitude between man and gorilla. As regards the brain, the gorilla's is the lowest of the anthropoid apes, since the brain does not cover the cerebellum, by which he approaches the cynocephali. It is not in his size and strength that we must look for human characters, but in the conformation of the hands, and just in this he differs considerably from man. The thumb is very short in the gorilla, and its muscles much reduced. The long flexor is replaced by a tendinous tract, the origin of which is lost in the tendinous sheaths of the flexors of the other fingers. It follows that the thumb has no independent movement of opposition. In the orang, though the thumb is shortened, it still is capable of an independent flexion; but this depends on a peculiar disposition which he had lately verified with M. Alix. In point of fact, the proper flexor of the thumb is entirely absent in the orang; there is not even found that tendinous tract existing in the gorilla; but by a singular contrivance, the marginal fibres of the adductor muscle of the thumb terminate in a tendon which is placed in the axis of the first terminal axis.

The fact which establishes a great relation between man and apes is, that in them the optic nerves open directly in the cerebral hemispheres, whilst in the other vertebrates these nerves reach the brain only by the intermediation of the tubercula quadrigemina. This peculiarity may explain the existence of a certain conformity in the manner in which man and ape perceive their sensations. But it does

not follow that there is an identity in the nature of their intelligence; for, though the senses are subservient to the operations of the intellect, it cannot be said that they produce it. Man must be placed by the side of the ape, but only as an animal. Man is a being apart, just as all other vertebrata must be separated, as they cannot be considered as having originated from each other.

M. Gratiolet added, that as a pupil of Blainville, with whom originated the idea of a series in natural history, he felt bound to state how much the ideas of his master had become modified. Where Blainville formerly recognised transitions from group to group, he, in the latter period of his life, only saw maxima and minima of realisation for each group. He acknowledged an ideal series between types, but not a lineal series between all beings. It is thus impossible to invoke the opinions of Blainville for the support of theories tending to reduce to a single stock the numerous species composing the animal kingdom.

M. Broca is of opinion that M. Gratiolet had misunderstood the ideas of M. Schaafhausen, who, far from supporting the theory of Darwin, on the contrary, commenced by refuting the opinions of Mr. Huxley. M. Schaafhausen is apparently a partisan of *animal series*, but there is no necessary connexion between this and Darwin's theory. It may be admitted that all families, genera, species, from the monade up to man, are disposed in series, and form a continuous scale without necessarily admitting that the higher species are by a progressive evolution issued from the lower. Darwin's theory is a bold attempt to explain the existence of this series. It is the interpretation of a fact, and, whilst accepting the fact, we may reject the interpretation which was probably M. Schaafhausen's stand-point. The views communicated to the Society by M. Schaafhausen are both new and important. He shows that man is at present constantly engaged in the extermination of species which dispute his possession of the soil, and that he was so engaged in the past. We know that the superior human races tend to increase at the expense of the inferior races, some of which have disappeared within historical times, some will disappear, and others must have disappeared in the most remote periods. May, then, asks M. Schaafhausen, this destructive intervention of man not have contributed to enlarge the interval separating man from the group of anthropoid apes? He is of opinion that the interval was less originally than at present, and is less at present than it will be in times to come. The last opinion is very probable; the former is less so, for even if it were demonstrated, the question still would remain whether the intermediate types which disappeared sufficiently differed from such now limiting the two groups, sensibly to

diminish the distance. At all events, the ingenious idea of M. Schaafhausen deserved serious consideration.

M. de Quatrefages confirmed the remarks of M. Gratiolet touching the first ideas of Blainville on the animal series.

M. Pouchet considered that the idea of a linear series on the ensemble of the animal kingdom was now abandoned, and justly so, because there existed an impassable abyss between the vertebrates and invertebrates. But in confining ourselves to the vertebrata we may imagine a series resembling the branching off from an arborescent trunk, many of the branches representing as many extinct species being wanting. He therefore believed with Mr. Darwin that we are the remote cousins of the gorilla by the intermediation of a vertebrate, the type of which is now lost.

M. de Quatrefages would not admit the ideas of Darwin as regards species, but admits them with respect to races, which are daily formed under our own eyes.

M. Sansen cannot allow this observation to pass without contradiction. M. Quatrefages would be much embarrassed to name one single race perfectly new.

M. Quatrefages replied that the number of esculent vegetables had, independent of new importations, remarkably increased since the time of Louis XIII, and he cited the sheep of Manchamp, Malnegrée, Charmoise, as examples of new races produced within a few years by the crossing of distinct races. The difference between him and M. Sansen consisted only in the definition of the word race.

M. Sansen said it was quite true that he differed with M. Quatrefages as to the definition of race. In his opinion race is a group of individuals presenting an ensemble of similar forms and capable of being transmitted; homogeneity of typical character, and hereditary transmission, being the necessary attribute of race. And here he must remark that the term of race had not yet been defined in the Society, and an understanding on that subject became requisite. As regards the examples invoked by M. Quatrefages, they cannot be considered as new races, the sheep of Manchamp are Merinos differing only from the mother race by their silky wool. This is not a race character, the same wool being found in perfectly distinct races. As to the sheep of the Charmoise, he could show him two distinct types. They only resemble each other by their aptitude for fattening, which is not a race character. And as regards some esculent vegetables they had become so by culture. When they are left to nature their characters disappear, which does not prove that they constitute new races.

[*To be continued.*]